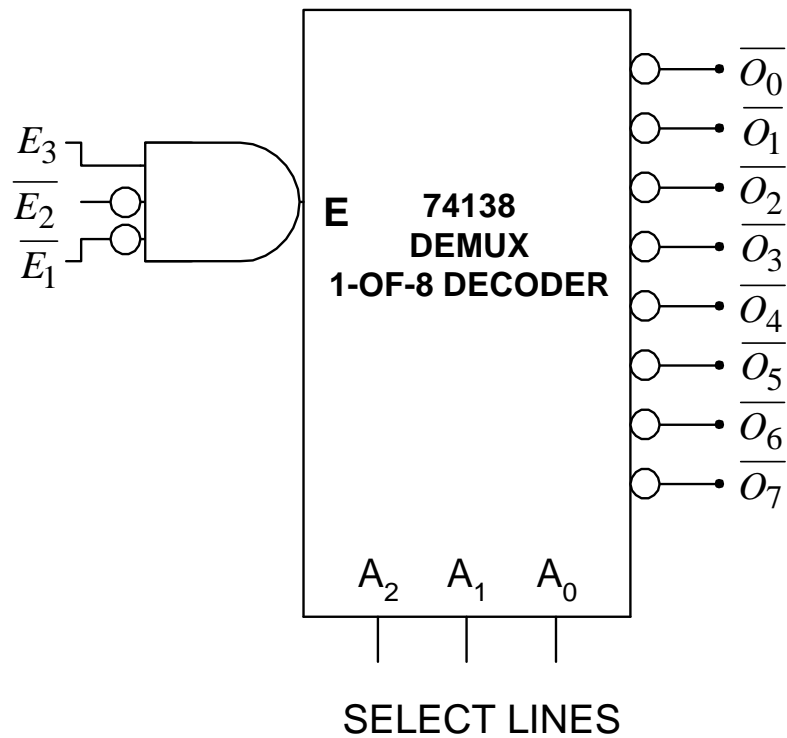


# Lecture 17: DEMULTIPLEXER

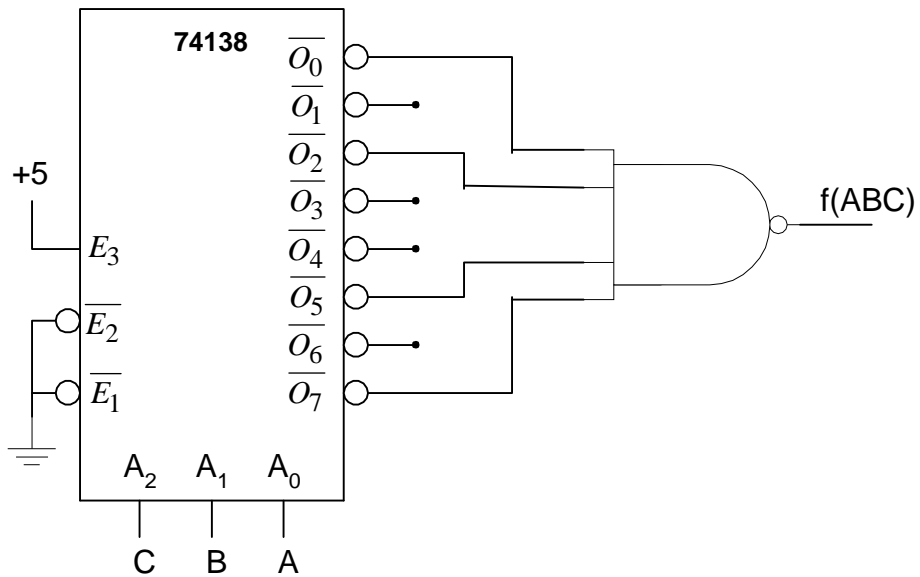
# DEMULTIPLEXER LOGIC DIAGRAM

- Logic circuit that depending on the status of its select inputs will funnel its data input to one of several data outputs.
- Separate enable inputs (useful for cascading decoders) into AND gate which must be high to enable the decoder outputs.



$\overline{E_1}$	$\overline{E_2}$	$E_3$	OUTPUTS
0	0	1	RESPOND TO INPUT CODE A2A1A0
1	X	X	DISABLED -ALL HIGH
X	1	X	DISABLED -ALL HIGH
X	X	0	DISABLED -ALL HIGH

# LOGIC FUNCTION GENERATION



A	B	X
0	0	1
0	1	1
1	0	1
1	1	0

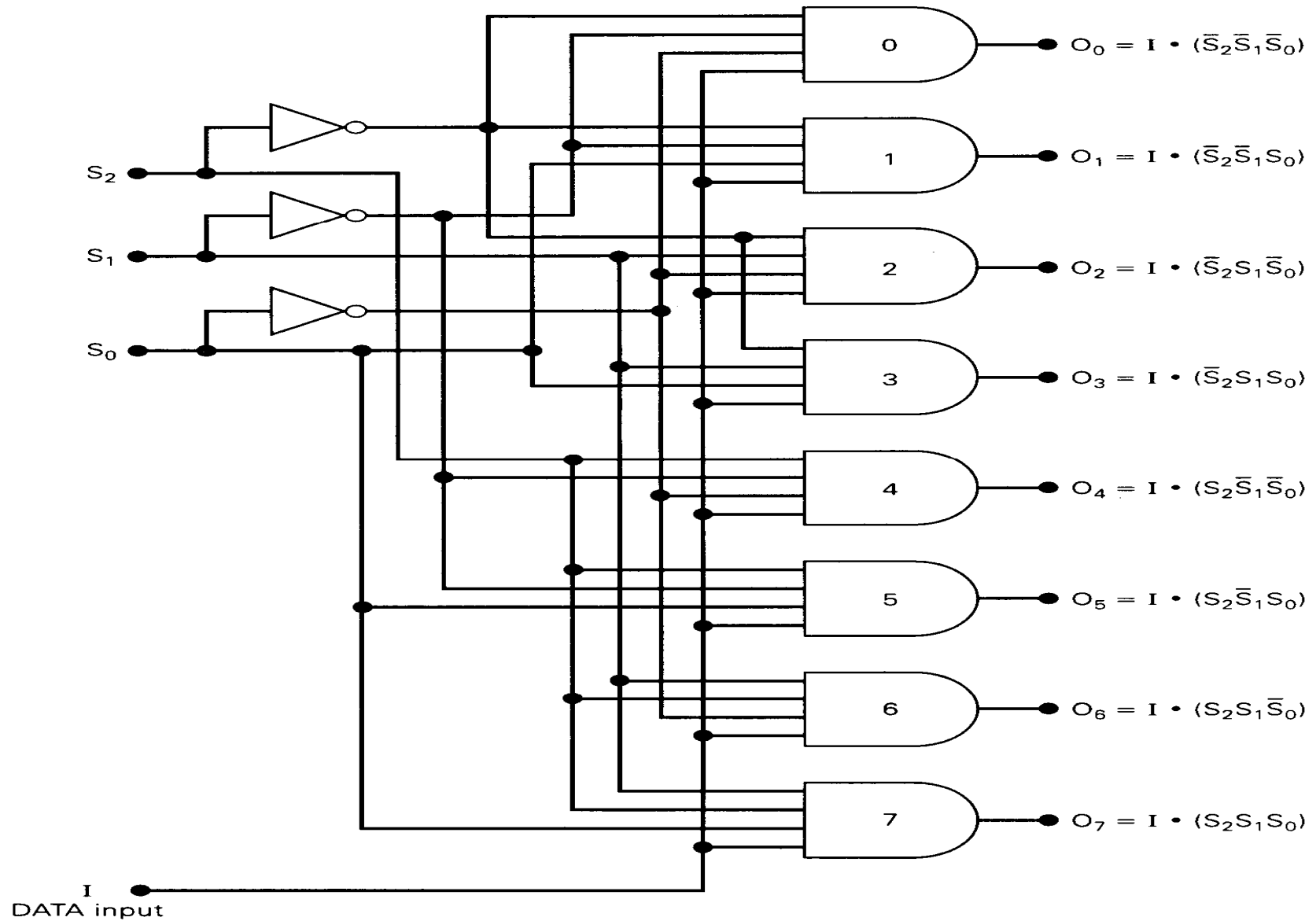
C	B	A	f
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	

**NAND-** any low in gives a high out

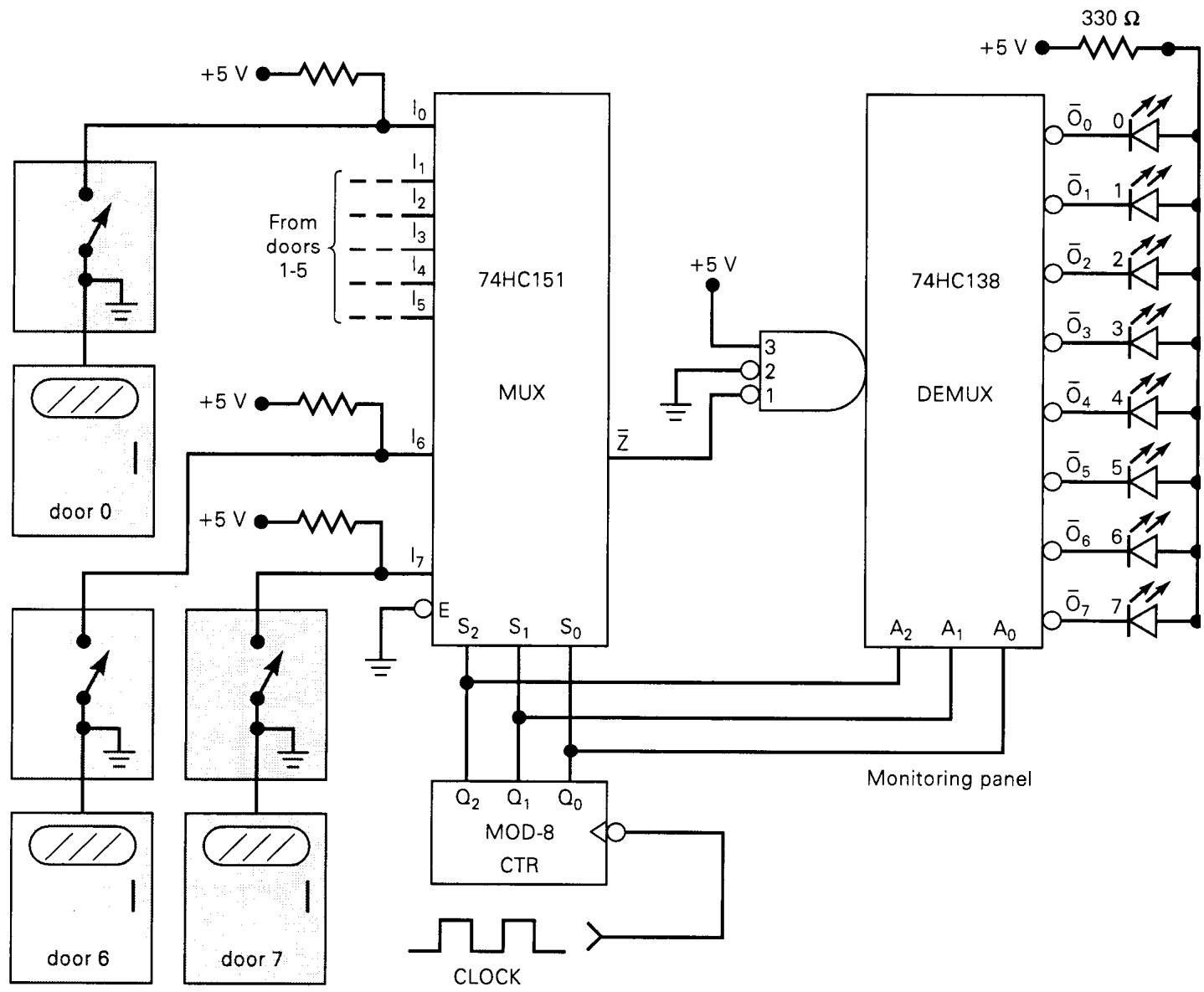
# DEMULTIPLEXER

SELECT code			OUTPUTS							
$S_2$	$S_1$	$S_0$	$O_7$	$O_6$	$O_5$	$O_4$	$O_3$	$O_2$	$O_1$	$O_0$
0	0	0	0	0	0	0	0	0	0	1
0	0	1	0	0	0	0	0	0	1	0
0	1	0	0	0	0	0	0	1	0	0
0	1	1	0	0	0	0	1	0	0	0
1	0	0	0	0	0	1	0	0	0	0
1	0	1	0	0	1	0	0	0	0	0
1	1	0	0	1	0	0	0	0	0	0
1	1	1	1	0	0	0	0	0	0	0

# DEMULTIPLEXER

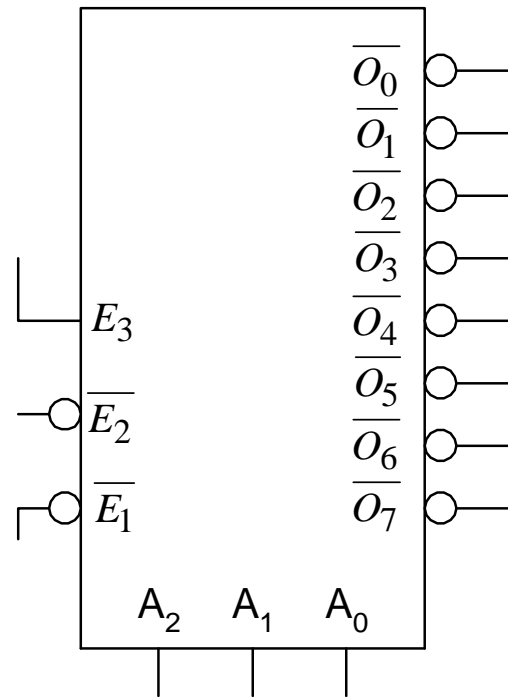


# PROJECT: A SECURITY MONITORING SYSTEM



# Assignment -17

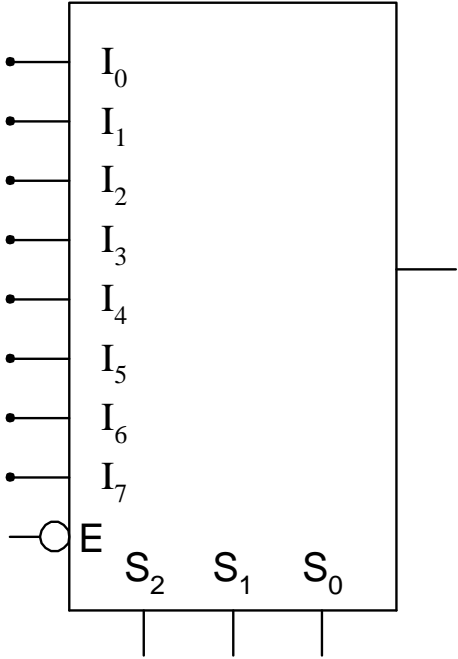
NAME THE CIRCUIT





**TEST**

**NAME THE CIRCUIT**

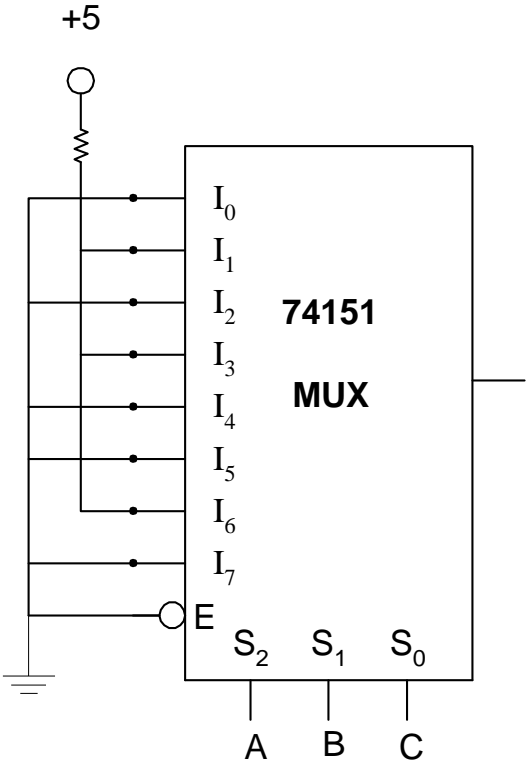






# TEST

STATE THE BOOLEAN EXPRESSION



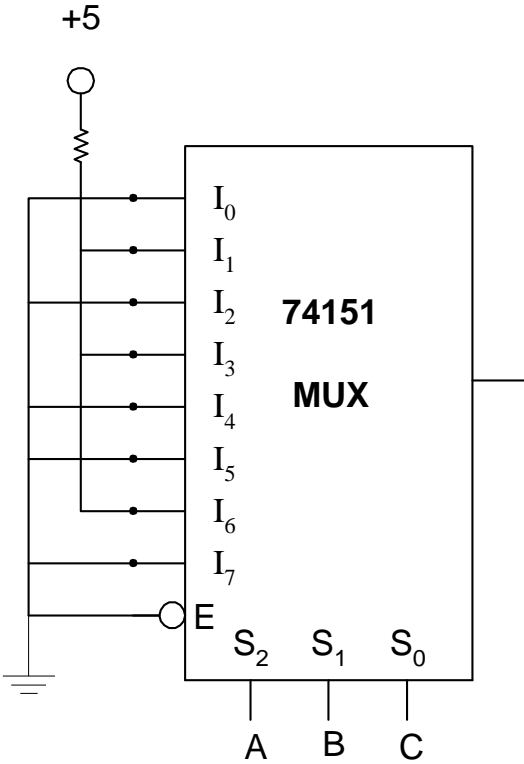
$$A'B'C + A'BC + ABC'$$

A	B	C	F
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	



# TEST

STATE THE BOOLEAN EXPRESSION

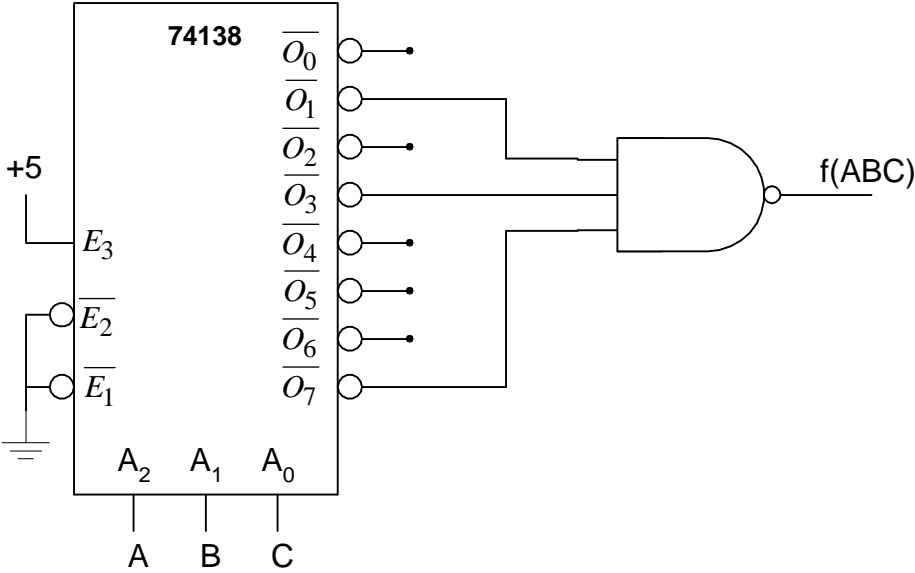


A	B	C	F
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	



# TEST

STATE THE BOOLEAN EXPRESSION

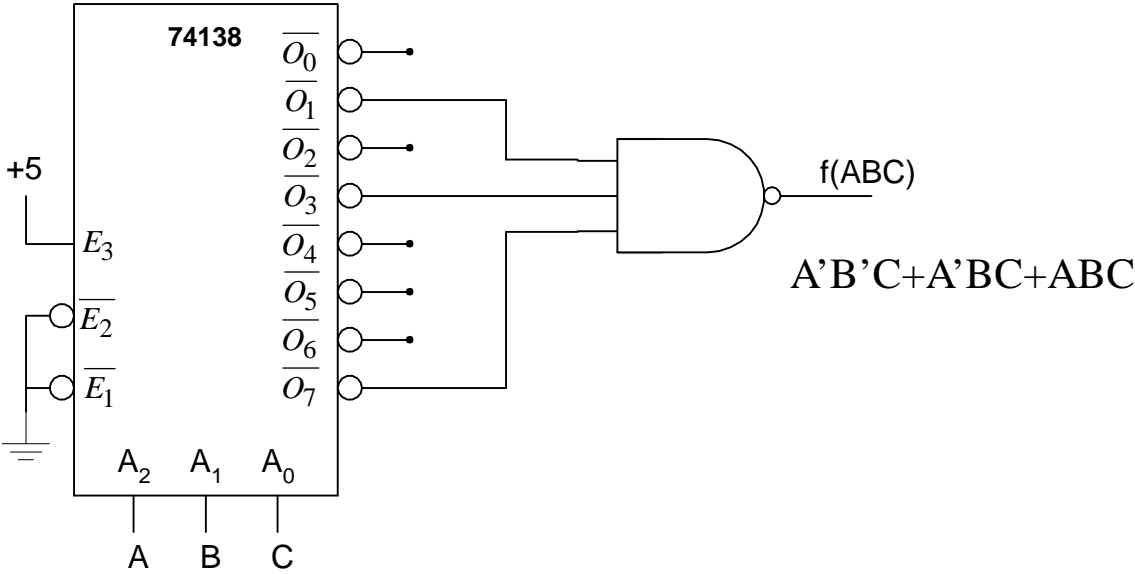


A	B	C	F
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	



# TEST

STATE THE BOOLEAN EXPRESSION



A	B	C	F
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	